

RAPIDAN SERVICE AUTHORITY
11235 SPOTSWOOD TRAIL
PO BOX 148
RUCKERSVILLE, VA 22968
TEL 434-985-7811
FAX 434-985-6075



RAPIDAN SERVICE AUTHORITY
3489 GERMANNA HWY
PO BOX 736
LOCUST GROVE, VA 22508
TEL 540-972-2133
FAX 540-972-7065

Serving the Counties of Greene, Madison and Orange

SENT ELECTRONICALLY AND
REGULAR MAIL

January 25, 2016

Ms. Alison Thompson
Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193

RE: Wilderness POTW – VA0083411
Permit Renewal Application

Dear Ms. Thompson:

Attached is the above referenced permit renewal application for your review and processing. RSA requests that this new permit continue the reduced effluent monitoring for the 2.0 MGD Flow Tier Special Condition contained in the existing permit.

We look forward to working with you as this application is processed in order to answer any questions or issues that may arise. Please contact me via email at tclemons@rapidan.org or at (434) 985-7811 should you need additional information.

Sincerely,

Timothy L. Clemons
Assistant General Manager

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086**BASIC APPLICATION INFORMATION****PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:**

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.

Facility name Wilderness Wastewater Treatment Plant

Mailing Address P.O. Box 148
Ruckersville, VA 22968

Contact person Tim Clemons

Title Assistant General Manager

Telephone number (434) 985-7811

Facility Address 36075 Wilderness Shores Way
(not P.O. Box) Locust Grove, VA 22508

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name _____

Mailing Address _____

Contact person _____

Title _____

Telephone number _____

Is the applicant the owner or operator (or both) of the treatment works?

☒ owner ☒ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

☐ facility ☒ applicant**A.3. Existing Environmental Permits.** Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES VA 0083411 PSD na

UIC na Other na

RCRA na Other VAN 020029

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

| Name | Population Served | Type of Collection System | Ownership |
|-----------------------------------|-------------------|---------------------------|------------------|
| <u>Locust Grove/Wilderness</u> | <u>~12,150</u> | <u>Separate</u> | <u>municipal</u> |
| <u>corridor along Rt. 3 in NE</u> | _____ | _____ | _____ |
| <u>Orange County, Virginia</u> | _____ | _____ | _____ |
| Total population served | <u>~12,150</u> | | |

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A.5. Indian Country.

- a. Is the treatment works located in Indian Country?

☐ Yes ☒ No

- b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

☐ Yes ☒ No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

- a. Design flow rate
- 2.0
- mgd

| | <u>Two Years Ago</u> | <u>Last Year</u> | <u>This Year</u> |
|-----------------------------------|----------------------|------------------|------------------|
| b. Annual average daily flow rate | <u>0.882</u> | <u>.0800</u> | <u>0.775</u> mgd |
| c. Maximum daily flow rate | <u>1.748</u> | <u>2.429</u> | <u>1.492</u> mgd |

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

| | |
|---|--------------|
| <input checked="" type="checkbox"/> Separate sanitary sewer | <u>100</u> % |
| <input type="checkbox"/> Combined storm and sanitary sewer | <u>0</u> % |

A.8. Discharges and Other Disposal Methods.

- a. Does the treatment works discharge effluent to waters of the U.S.?
- ☒
- Yes
- ☐
- No

If yes, list how many of each of the following types of discharge points the treatment works uses:

| | |
|--|----------|
| i. Discharges of treated effluent | <u>1</u> |
| ii. Discharges of untreated or partially treated effluent | <u>0</u> |
| iii. Combined sewer overflow points | <u>0</u> |
| iv. Constructed emergency overflows (prior to the headworks) | <u>0</u> |
| v. Other | <u>0</u> |

- b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.?
- ☐
- Yes
- ☒
- No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharged to surface impoundment(s) _____ mgd

Is discharge _____ continuous or _____ intermittent?

- c. Does the treatment works land-apply treated wastewater?
- ☐
- Yes
- ☒
- No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ Mgd

Is land application _____ continuous or _____ intermittent?

- d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works?
- ☐
- Yes
- ☒
- No

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If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

If transport is by a party other than the applicant, provide:

Transporter name: _____

Mailing Address: _____

Contact person: _____

Title: _____

Telephone number: _____

For each treatment works that receives this discharge, provide the following:

Name: _____

Mailing Address: _____

Contact person: _____

Title: _____

Telephone number: _____

If known, provide the NPDES permit number of the treatment works that receives this discharge. _____

Provide the average daily flow rate from the treatment works into the receiving facility. _____

mgd

- e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)?

____ Yes



No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

Annual daily volume disposed of by this method: _____

Is disposal through this method _____ continuous or _____ intermittent?

FACILITY NAME AND PERMIT NUMBER:

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WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 once for each outfall (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. If you answered "no" to question A.8.a, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

- a. Outfall number 001
- b. Location Locust Grove 22508
(City or town, if applicable) (Zip Code)
Orange VA
(County) (State)
38 22 30 77 44 45
(Latitude) (Longitude)
- c. Distance from shore (if applicable) na ft.
- d. Depth below surface (if applicable) na ft.
- e. Average daily flow rate 0.775 mgd
- f. Does this outfall have either an intermittent or a periodic discharge? Yes ☒ No (go to A.9.g.)
- If yes, provide the following information:
- Number of times per year discharge occurs: _____
- Average duration of each discharge: _____
- Average flow per discharge: _____ mgd
- Months in which discharge occurs: _____
- g. Is outfall equipped with a diffuser? Yes ☒ No

A.10. Description of Receiving Waters.

- a. Name of receiving water Rapidan River
- b. Name of watershed (if known) Rappahannock
- United States Soil Conservation Service 14-digit watershed code (if known): UNK
- c. Name of State Management/River Basin (if known): Rappahannock
- United States Geological Survey 8-digit hydrologic cataloging unit code (if known): UNK
- d. Critical low flow of receiving stream (if applicable):
acute 6.94 cfs chronic 11.45 cfs
- e. Total hardness of receiving stream at critical low flow (if applicable): 25 mg/l of CaCO₃

FACILITY NAME AND PERMIT NUMBER:

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A.11. Description of Treatment.

- a. What levels of treatment are provided? Check all that apply.

☐ Primary☐ Secondary☒ Advanced☐ Other. Describe: _____

- b. Indicate the following removal rates (as applicable):

Design BOD₅ removal or Design CBOD₅ removal 93 %Design SS removal 94 %Design P removal 94 %Design N removal 91 %Other na %

- c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

Chlorination - Sodium Hypochlorite

If disinfection is by chlorination, is dechlorination used for this outfall?

☒ Yes ☐ No

- d. Does the treatment plant have post aeration?

☒ Yes ☐ No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

| PARAMETER | MAXIMUM DAILY VALUE | | AVERAGE DAILY VALUE | | |
|----------------------|---------------------|-------|---------------------|-------|-------------------|
| | Value | Units | Value | Units | Number of Samples |
| pH (Minimum) | 6.8 | s.u. | | | |
| pH (Maximum) | 8.5 | s.u. | | | |
| Flow Rate | 1.492 | mgd | 0.801 | mgd | 365 |
| Temperature (Winter) | na | | | | |
| Temperature (Summer) | na | | | | |

* For pH please report a minimum and a maximum daily value

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | AVERAGE DAILY DISCHARGE | | | ANALYTICAL METHOD | ML / MDL |
|-----------|-------------------------|-------|-------------------------|-------|-------------------|-------------------|----------|
| | Conc. | Units | Conc. | Units | Number of Samples | | |

CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.

| | | | | | | | |
|--|--------|-----|------|-----|------|-----|-------------|
| BIOCHEMICAL OXYGEN DEMAND (Report one) | BOD-5 | | | | | | |
| | CBOD-5 | 11 | mg/l | 1 | mg/l | 156 | SM 5210B |
| FECAL COLIFORM | | 11 | mpn | 2 | mpn | 52 | Colilert-18 |
| TOTAL SUSPENDED SOLIDS (TSS) | | 7.6 | mg/l | 2.3 | mg/l | 156 | SM 2540D |

END OF PART A.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:

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BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

_____ * gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

* RSA continues to work with DEQ regarding the Lake of the Woods vacuum collection system.

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

- The area surrounding the treatment plant, including all unit processes.
- The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- Each well where wastewater from the treatment plant is injected underground.
- Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g., chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ____ Yes ☒ No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: _____

Mailing Address: _____

Telephone Number: _____

Responsibilities of Contractor: _____

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

- List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

na _____

- Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

____ Yes ____ No

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- c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

- d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

| Implementation Stage | Schedule MM / DD / YYYY | Actual Completion MM / DD / YYYY |
|----------------------------|----------------------------|-------------------------------------|
| - Begin construction | ___/___/___ | ___/___/___ |
| - End construction | ___/___/___ | ___/___/___ |
| - Begin discharge | ___/___/___ | ___/___/___ |
| - Attain operational level | ___/___/___ | ___/___/___ |

- e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ☐ Yes ☐ No

Describe briefly: _____

B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | AVERAGE DAILY DISCHARGE | | | ANALYTICAL METHOD | ML / MDL |
|---|-------------------------|-------|-------------------------|-------|-------------------|-------------------|----------|
| | Conc. | Units | Conc. | Units | Number of Samples | | |
| CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS. | | | | | | | |
| AMMONIA (as N) | na | | | | | | |
| CHLORINE (TOTAL RESIDUAL, TRC) | <QL | mg/l | <QL | mg/l | 1095 | SM 4500.C.1.G | |
| DISSOLVED OXYGEN | 13.1 | mg/l | 9.9 | mg/l | 365 | SM 4500-0 | |
| TOTAL KJELDAHL NITROGEN (TKN) | 4.18 | mg/l | 1.31 | mg/l | 156 | SM 4500 NH3C | |
| NITRATE PLUS NITRITE NITROGEN | 0.65 | mg/l | 0.16 | mg/l | 52 | SM 4500 NO3F | |
| OIL and GREASE | na | | | | | | |
| PHOSPHORUS (Total) | 4.92 | mg/l | 0.27 | mg/l | 52 | SM 4500-PE | |
| TOTAL DISSOLVED SOLIDS (TDS) | na | | | | | | |
| OTHER | na | | | | | | |

END OF PART B.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086**BASIC APPLICATION INFORMATION****PART C. CERTIFICATION**

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

☒ Basic Application Information packet

Supplemental Application Information packet:

☒ Part D (Expanded Effluent Testing Data)☒ Part E (Toxicity Testing: Biomonitoring Data)☐ Part F (Industrial User Discharges and RCRA/CERCLA Wastes)☐ Part G (Combined Sewer Systems)**ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title Dudley M. Pattie General ManagerSignature Telephone number (434) 985-7811Date signed 1/22/16

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086**SUPPLEMENTAL APPLICATION INFORMATION****PART D. EXPANDED EFFLUENT TESTING DATA**

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/ MDL |
|---|-------------------------|-------|------|-------|-------------------------|-------|------|-------|-------------------|-------------------|---------|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | Number of Samples | | |
| METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS. | | | | | | | | | | | |
| ANTIMONY | | | | | | | | | | | |
| ARSENIC | | | | | | | | | | | |
| BERYLLIUM | | | | | | | | | | | |
| CADMIUM | | | | | | | | | | | |
| CHROMIUM | | | | | | | | | | | |
| COPPER | | | | | | | | | | | |
| LEAD | | | | | | | | | | | |
| MERCURY | | | | | | | | | | | |
| NICKEL | | | | | | | | | | | |
| SELENIUM | | | | | | | | | | | |
| SILVER | | | | | | | | | | | |
| THALLIUM | | | | | | | | | | | |
| ZINC | | | | | | | | | | | |
| CYANIDE | | | | | | | | | | | |
| TOTAL PHENOLIC COMPOUNDS | | | | | | | | | | | |
| HARDNESS (AS CaCO ₃) | | | | | | | | | | | |
| Use this space (or a separate sheet) to provide information on other metals requested by the permit writer. | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

FACILITY NAME AND PERMIT NUMBER:

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| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/ MDL |
|-----------------------------|-------------------------|-------|------|-------|-------------------------|-------|------|-------|-------------------|-------------------|---------|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | Number of Samples | | |
| VOLATILE ORGANIC COMPOUNDS. | | | | | | | | | | | |
| ACROLEIN | | | | | | | | | | | |
| ACRYLONITRILE | | | | | | | | | | | |
| BENZENE | | | | | | | | | | | |
| BROMOFORM | | | | | | | | | | | |
| CARBON TETRACHLORIDE | | | | | | | | | | | |
| CLOROBENZENE | | | | | | | | | | | |
| CHLORODIBROMO-METHANE | | | | | | | | | | | |
| CHLOROETHANE | | | | | | | | | | | |
| 2-CHLORO-ETHYL VINYL ETHER | | | | | | | | | | | |
| CHLOROFORM | | | | | | | | | | | |
| DICHLOROBROMO-METHANE | | | | | | | | | | | |
| 1,1-DICHLOROETHANE | | | | | | | | | | | |
| 1,2-DICHLOROETHANE | | | | | | | | | | | |
| TRANS-1,2-DICHLORO-ETHYLENE | | | | | | | | | | | |
| 1,1-DICHLOROETHYLENE | | | | | | | | | | | |
| 1,2-DICHLOROPROPANE | | | | | | | | | | | |
| 1,3-DICHLORO-PROPYLENE | | | | | | | | | | | |
| ETHYLBENZENE | | | | | | | | | | | |
| METHYL BROMIDE | | | | | | | | | | | |
| METHYL CHLORIDE | | | | | | | | | | | |
| METHYLENE CHLORIDE | | | | | | | | | | | |
| 1,1,2,2-TETRACHLORO-ETHANE | | | | | | | | | | | |
| TETRACHLORO-ETHYLENE | | | | | | | | | | | |
| TOLUENE | | | | | | | | | | | |

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| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/ MDL |
|-----------------------|-------------------------|-------|------|-------|-------------------------|-------|------|-------|-------------------|-------------------|---------|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | Number of Samples | | |
| 1,1,1-TRICHLOROETHANE | | | | | | | | | | | |
| 1,1,2-TRICHLOROETHANE | | | | | | | | | | | |
| TRICHLOROETHYLENE | | | | | | | | | | | |
| VINYL CHLORIDE | | | | | | | | | | | |

Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|

ACID-EXTRACTABLE COMPOUNDS

| | | | | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|--|--|--|
| P-CHLORO-M-CRESOL | | | | | | | | | | | |
| 2-CHLOROPHENOL | | | | | | | | | | | |
| 2,4-DICHLOROPHENOL | | | | | | | | | | | |
| 2,4-DIMETHYLPHENOL | | | | | | | | | | | |
| 4,6-DINITRO-O-CRESOL | | | | | | | | | | | |
| 2,4-DINITROPHENOL | | | | | | | | | | | |
| 2-NITROPHENOL | | | | | | | | | | | |
| 4-NITROPHENOL | | | | | | | | | | | |
| PENTACHLOROPHENOL | | | | | | | | | | | |
| PHENOL | | | | | | | | | | | |
| 2,4,6-TRICHLOROPHENOL | | | | | | | | | | | |

Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|

BASE-NEUTRAL COMPOUNDS.

| | | | | | | | | | | | |
|--------------------|--|--|--|--|--|--|--|--|--|--|--|
| ACENAPHTHENE | | | | | | | | | | | |
| ACENAPHTHYLENE | | | | | | | | | | | |
| ANTHRACENE | | | | | | | | | | | |
| BENZIDINE | | | | | | | | | | | |
| BENZO(A)ANTHRACENE | | | | | | | | | | | |
| BENZO(A)PYRENE | | | | | | | | | | | |

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/ MDL |
|--------------------------------|-------------------------|-------|------|-------|-------------------------|-------|------|-------|-------------------|-------------------|---------|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | Number of Samples | | |
| 3,4 BENZO-FLUORANTHENE | | | | | | | | | | | |
| BENZO(GHI)PERYLENE | | | | | | | | | | | |
| BENZO(K)FLUORANTHENE | | | | | | | | | | | |
| BIS (2-CHLOROETHOXY) METHANE | | | | | | | | | | | |
| BIS (2-CHLOROETHYL)-ETHER | | | | | | | | | | | |
| BIS (2-CHLOROISO-PROPYL) ETHER | | | | | | | | | | | |
| BIS (2-ETHYLHEXYL) PHTHALATE | | | | | | | | | | | |
| 4-BROMOPHENYL PHENYL ETHER | | | | | | | | | | | |
| BUTYL BENZYL PHTHALATE | | | | | | | | | | | |
| 2-CHLORONAPHTHALENE | | | | | | | | | | | |
| 4-CHLORPHENYL PHENYL ETHER | | | | | | | | | | | |
| CHRYSENE | | | | | | | | | | | |
| DI-N-BUTYL PHTHALATE | | | | | | | | | | | |
| DI-N-OCTYL PHTHALATE | | | | | | | | | | | |
| DIBENZO(A,H) ANTHRACENE | | | | | | | | | | | |
| 1,2-DICHLOROBENZENE | | | | | | | | | | | |
| 1,3-DICHLOROBENZENE | | | | | | | | | | | |
| 1,4-DICHLOROBENZENE | | | | | | | | | | | |
| 3,3-DICHLOROBENZIDINE | | | | | | | | | | | |
| DIETHYL PHTHALATE | | | | | | | | | | | |
| DIMETHYL PHTHALATE | | | | | | | | | | | |
| 2,4-DINITROTOLUENE | | | | | | | | | | | |
| 2,6-DINITROTOLUENE | | | | | | | | | | | |
| 1,2-DIPHENYLHYDRAZINE | | | | | | | | | | | |

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/ MDL |
|----------------------------|-------------------------|-------|------|-------|-------------------------|-------|------|-------|-------------------|-------------------|---------|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | Number of Samples | | |
| FLUORANTHENE | | | | | | | | | | | |
| FLUORENE | | | | | | | | | | | |
| HEXACHLOROBENZENE | | | | | | | | | | | |
| HEXACHLOROBUTADIENE | | | | | | | | | | | |
| HEXACHLOROCYCLO-PENTADIENE | | | | | | | | | | | |
| HEXACHLOROETHANE | | | | | | | | | | | |
| INDENO(1,2,3-CD)PYRENE | | | | | | | | | | | |
| ISOPHORONE | | | | | | | | | | | |
| NAPHTHALENE | | | | | | | | | | | |
| NITROBENZENE | | | | | | | | | | | |
| N-NITROSODI-N-PROPYLAMINE | | | | | | | | | | | |
| N-NITROSODI- METHYLAMINE | | | | | | | | | | | |
| N-NITROSODI-PHENYLAMINE | | | | | | | | | | | |
| PHENANTHRENE | | | | | | | | | | | |
| PYRENE | | | | | | | | | | | |
| 1,2,4-TRICHLOROBENZENE | | | | | | | | | | | |

Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.

Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

SUPPLEMENTAL APPLICATION INFORMATION**PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

____ chronic ____ acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: _____ Test number: _____ Test number: _____

a. Test information.

| | | | |
|-----------------------------------|--|--|--|
| Test species & test method number | | | |
| Age at initiation of test | | | |
| Outfall number | | | |
| Dates sample collected | | | |
| Date test started | | | |
| Duration | | | |

b. Give toxicity test methods followed.

| | | | |
|--|--|--|--|
| Manual title | | | |
| Edition number and year of publication | | | |
| Page number(s) | | | |

c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.

| | | | |
|-------------------|--|--|--|
| 24-Hour composite | | | |
| Grab | | | |

d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)

| | | | |
|----------------------|--|--|--|
| Before disinfection | | | |
| After disinfection | | | |
| After dechlorination | | | |

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086

Test number: _____

Test number: _____

Test number: _____

e. Describe the point in the treatment process at which the sample was collected.

Sample was collected:

f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.

Chronic toxicity

Acute toxicity

g. Provide the type of test performed.

Static

Static-renewal

Flow-through

h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.

Laboratory water

Receiving water

i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.

Fresh water

Salt water

j. Give the percentage effluent used for all concentrations in the test series.

k. Parameters measured during the test. (State whether parameter meets test method specifications)

pH

Salinity

Temperature

Ammonia

Dissolved oxygen

l. Test Results.

Acute:

Percent survival in 100%
effluent

%

%

%

LC₅₀

95% C.I.

%

%

%

Control percent survival

%

%

%

Other (describe)

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

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Chronic:

| | | | |
|--------------------------|---|---|---|
| NOEC | % | % | % |
| IC ₂₅ | % | % | % |
| Control percent survival | % | % | % |
| Other (describe) | | | |

m. Quality Control/Quality Assurance.

| | | | |
|---|--|--|--|
| Is reference toxicant data available? | | | |
| Was reference toxicant test within acceptable bounds? | | | |
| What date was reference toxicant test run (MM/DD/YYYY)? | | | |
| Other (describe) | | | |

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

___ Yes ☒ No If yes, describe: _____

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: _____ (MM/DD/YYYY)

Summary of results: (see instructions)

RESULTS SUBMITTED: (2012) 04/13/12, 06/29/12, 09/27/12, 11/12/12 (2013) 03/18/13,
05/29/13, 10/02/13, 02/12/14 (2014) 07/18/14 (2015) 10/28/15

END OF PART E.

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM
2A YOU MUST COMPLETE.**

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?

☒ Yes ☐ No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 0

b. Number of CIUs. 0

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: na

Mailing Address: _____

F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (____continuous or ____intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (____continuous or ____intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☐ Yes ☐ No

b. Categorical pretreatment standards ☐ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

FACILITY NAME AND PERMIT NUMBER:

Wilderness WWTP - VA0083411

Form Approved 1/14/99
OMB Number 2040-0086

F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☐ No If yes, describe each episode.

na

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? ☐ Yes ☒ No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

☐ Truck ☐ Rail ☐ Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number

Amount

Units

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

☐ Yes (complete F.13 through F.15.) ☒ No

Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

☐ Yes ☐ No

If yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?

☐ Continuous ☐ Intermittent If intermittent, describe discharge schedule.

END OF PART F.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE



218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ <www.ess-services.com>

Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 07/14/2015
Report #: 3487
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

This laboratory report may not be reproduced, except in full, without the written approval of ESS.

If you have received this report in error, please notify ESS immediately at (540) 825-6660.

Angie Woodward

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials *AW*





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 07/14/2015
Report #: 3487
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0053046
Sample Date/Time: 06/23/2015 / 11:20
Sample Source: Outfall 001
Date Received: 06/23/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|------------------------------|------------|------|--------------|-----------|---------------|-------|------|
| Total Cyanide | < 0.005 | mg/l | 0.005 | EPA 335.4 | 06/25/2015 | 13:09 | 013 |
| Phenols, Total | < 0.02 | mg/l | 0.02 | EPA 420.4 | 06/29/2015 | 15:46 | 013 |
| Total Hardness as CaCO3 | 188 | mg/l | 0.0500 | EPA 200.7 | 06/26/2015 | 08:55 | 574 |
| Antimony, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Arsenic, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Beryllium, Total Recoverable | < 0.00100 | mg/l | 0.00100 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Cadmium, Total Recoverable | < 0.00250 | mg/l | 0.00250 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Chromium, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Copper, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Lead, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Mercury, Total Recoverable | < 0.000200 | mg/l | 0.000200 | EPA 245.2 | 06/29/2015 | 17:10 | 574 |
| Nickel, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Selenium, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Silver, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Thallium, Total Recoverable | < 0.00400 | mg/l | 0.00400 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| Zinc, Total Recoverable | 0.0355 | mg/l | 0.0100 | EPA 200.8 | 06/26/2015 | 10:25 | 574 |
| 624 Volatiles | | | | | | | |
| Acrolein | < 0.0100 | mg/L | 0.0100 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Acrylonitrile | < 0.0100 | mg/l | 0.0100 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Benzene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Dichlorobromomethane | 0.00556 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Bromoform | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Bromomethane | < 0.00500 | mg/L | 0.00500 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Carbon Tetrachloride | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Chlorobenzene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Chlorodibromomethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Chloroethane | < 0.00500 | mg/L | 0.00500 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 2-Chloroethylvinylether | < 0.0200 | mg/L | 0.0200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Chloroform | 0.0310 | mg/L | 0.0020 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Chloromethane | < 0.00500 | mg/L | 0.00500 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,2-Dichlorobenzene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,3-Dichlorobenzene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 07/14/2015
Report #: 3487
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0053046
Sample Date/Time: 06/23/2015 / 11:20
Sample Source: Outfall 001
Date Received: 06/23/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|---------------------------|-----------|------|--------------|---------|---------------|-------|------|
| 1,4-Dichlorobenzene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,1-Dichloroethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,2-Dichloroethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,1-Dichloroethene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| trans-1,2-Dichloroethene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,2-Dichloropropane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| cis-1,3-Dichloropropene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| trans-1,3-Dichloropropene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Ethylbenzene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Methylene Chloride | < 0.00500 | mg/L | 0.00500 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,1,2,2-Tetrachloroethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Tetrachloroethene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Toluene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,1,1-Trichloroethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 1,1,2-Trichloroethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Trichloroethene | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Trichlorofluoromethane | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| Vinyl Chloride | < 0.00200 | mg/L | 0.00200 | EPA 624 | 07/07/2015 | 13:49 | 574 |
| 625 Semi-Volatiles | | | | | | | |
| Benaphthene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Benaphthylene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Anthracene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Acridine | < 0.0200 | mg/L | 0.0200 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Benzo(a)anthracene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Benzo(a)pyrene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Benzo(b)fluoranthene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Benzo(ghi)perylene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Benzo(k)fluoranthene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Bromophenyl phenyl ether | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Ethylbenzyl Phthalate | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Chloro-3-methylphenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Di(2-Chloroethoxy)methane | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 07/14/2015
Report #: 3487
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0053046
Sample Date/Time: 06/23/2015 / 11:20
Sample Source: Outfall 001
Date Received: 06/23/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|-----------------------------|----------|------|--------------|---------|---------------|-------|------|
| Bis(2-Chloroethyl)ether | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Bis(2-Chloroisopropyl)ether | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2-Chloronaphthalene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2-Chlorophenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 4-Chlorophenyl phenyl ether | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Chrysene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Di-n-butyl Phthalate | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Di-n-octyl Phthalate | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Dibenzo(a,h)anthracene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 3,3-Dichlorobenzidine | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2,4-Dichlorophenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Diethyl Phthalate | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2,4-Dimethylphenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Dimethyl Phthalate | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2,4-Dinitrophenol | < 0.0200 | mg/L | 0.0200 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2,4-Dinitrotoluene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2,6-Dinitrotoluene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 1,2-Diphenylhydrazine | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Bis(2-Ethylhexyl)Phthalate | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Fluoranthene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Fluorene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Hexachlorobenzene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Hexachlorobutadiene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Hexachlorocyclopentadiene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Hexachloroethane | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Indeno(1,2,3-cd)pyrene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Isophorone | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 4,6-Dinitro-o-cresol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Naphthalene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Nitrobenzene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 2-Nitrophenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 4-Nitrophenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 07/14/2015
Report #: 3487
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0053046 Sample Source: Outfall 001
Sample Date/Time: 06/23/2015 / 11:20 Date Received: 06/23/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|---------------------------|----------|------|--------------|---------|---------------|-------|------|
| N-nitrosodimethylamine | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| N-nitrosodi-n-propylamine | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| N-nitrosodiphenylamine | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Pentachlorophenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Phenanthrene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Phenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| Pyrene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 1,2,4-Trichlorobenzene | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |
| 1,4,6-Trichlorophenol | < 0.0100 | mg/L | 0.0100 | EPA 625 | 06/26/2015 | 12:25 | 574 |

574 Samples subcontracted to VELAP ID# 460160

013 Samples subcontracted to VELAP ID# 460013





218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ <www.ess-services.com>

Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 08/28/2015
Report #: 4346
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

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If you have received this report in error, please notify ESS immediately at (540) 825-6660.

Angie Woodward

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials *AW*





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 08/28/2015
Report #: 4346
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0055137 Sample Source: Outfall 001
Sample Date/Time: 08/04/2015 / 14:10 Date Received: 08/04/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|-------------------------------------|------------|------|--------------|-----------|---------------|-------|------|
| Total Cyanide | < 0.005 | mg/l | 0.005 | EPA 335.4 | 08/10/2015 | 13:16 | 013 |
| Phenols, Total | < 0.02 | mg/l | 0.02 | EPA 420.4 | 08/07/2015 | 16:02 | 013 |
| Total Hardness as CaCO ₃ | 180 | mg/l | 0.0500 | EPA 200.7 | 08/11/2015 | 09:53 | 574 |
| Antimony, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Arsenic, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Beryllium, Total Recoverable | < 0.00100 | mg/l | 0.00100 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Cadmium, Total Recoverable | < 0.00250 | mg/l | 0.00250 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Chromium, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Copper, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Lead, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Mercury, Total Recoverable | < 0.000200 | mg/l | 0.000200 | EPA 245.2 | 08/13/2015 | 11:55 | 574 |
| Nickel, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Selenium, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Silver, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Thallium, Total Recoverable | < 0.00400 | mg/l | 0.00400 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| Zinc, Total Recoverable | 0.0425 | mg/l | 0.0100 | EPA 200.8 | 08/11/2015 | 15:18 | 574 |
| 624 Volatiles | | | | | | | |
| Acrolein | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Acrylonitrile | < 0.00500 | mg/l | 0.00500 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Benzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Dichlorobromomethane | 0.00658 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Bromoform | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Bromomethane | < 0.00500 | mg/l | 0.00500 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Carbon Tetrachloride | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chlorodibromomethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chloroethane | < 0.00500 | mg/l | 0.00500 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1-Chloroethylvinylether | < 0.0200 | mg/l | 0.0200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chloroform | 0.0529 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chloromethane | < 0.00500 | mg/l | 0.00500 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1,2-Dichlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1,3-Dichlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 08/28/2015
Report #: 4346
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0055137 Sample Source: Outfall 001
Sample Date/Time: 08/04/2015 / 14:10 Date Received: 08/04/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|---------------------------|-----------|------|--------------|---------|---------------|-------|------|
| 4-Dichlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1-Dichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 2-Dichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1-Dichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| trans-1,2-Dichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 2-Dichloropropane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| trans-1,3-Dichloropropene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| trans-1,3-Dichloropropene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Phenylbenzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Ethylene Chloride | < 0.00500 | mg/l | 0.00500 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1,2,2-Tetrachloroethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Trichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1,1-Trichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 1,2-Trichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Trichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Chlorofluoromethane | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| Methyl Chloride | < 0.00200 | mg/l | 0.00200 | EPA 625 | 08/10/2015 | 15:44 | 574 |
| 325 Semi-Volatiles | | | | | | | |
| Benaphthene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benaphthylene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Fluoranthene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Acridine | < 0.0200 | mg/l | 0.0200 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benzo(a)anthracene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benzo(a)pyrene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benzo(b)fluoranthene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benzo(ghi)perylene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benzo(k)fluoranthene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Bromophenyl phenyl ether | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benzyl Phthalate | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2-Chloro-3-methylphenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| (2-Chloroethoxy)methane | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 08/28/2015
Report #: 4346
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0055137 Sample Source: Outfall 001
Sample Date/Time: 08/04/2015 / 14:10 Date Received: 08/04/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|-----------------------------|----------|------|--------------|---------|---------------|-------|------|
| Bis(2-Chloroethyl)ether | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Bis(2-Chloroisopropyl)ether | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2-Chloronaphthalene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2-Chlorophenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 4-Chlorophenyl phenyl ether | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Chrysene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Di-n-butyl Phthalate | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Di-n-octyl Phthalate | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Dibenzo(a,h)anthracene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 3,3-Dichlorobenzidine | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,4-Dichlorophenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Diethyl Phthalate | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,4-Dimethylphenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Dimethyl Phthalate | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,4-Dinitrophenol | < 0.0200 | mg/l | 0.0200 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,4-Dinitrotoluene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,6-Dinitrotoluene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 1,2-Diphenylhydrazine | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Bis(2-Ethylhexyl)Phthalate | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Fluoranthene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Fluorene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Hexachlorobenzene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Hexachlorobutadiene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Hexachlorocyclopentadiene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Hexachloroethane | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Indeno(1,2,3-cd)pyrene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Isophorone | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 4,6-Dinitro-o-cresol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Naphthalene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Nitrobenzene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2-Nitrophenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 4-Nitrophenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |





Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 08/28/2015
Report #: 4346
Job #:
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 0055137 Sample Source: Outfall 001
Sample Date/Time: 08/04/2015 / 14:10 Date Received: 08/04/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|------------------------------|----------|------|--------------|---------|---------------|-------|------|
| -nitrosodimethylamine | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| -nitrosodi-n-propylamine | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| -nitrosodiphenylamine | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,4-Dichlorophenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Benanthrene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Phenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| Xyrene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 2,4-Trichlorobenzene | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 4,6-Trichlorophenol | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |
| 3,7,8-Tetrachlorodibenzodiox | < 0.0100 | mg/l | 0.0100 | EPA 625 | 08/11/2015 | 13:13 | 574 |

574 Samples subcontracted to VELAP ID# 460160

013 Samples subcontracted to VELAP ID# 460013





218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ www.ess-services.com

Revised Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 01/15/2016
Report #: 6280
Job #: 0004691
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

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If you have received this report in error, please notify ESS immediately at (540) 825-6660.

Angie Woodward

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials AW





Revised Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 01/15/2016
Report #: 6280
Job #: 0004691
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 59420R
Sample Date/Time: 10/29/2015 / 14:01
Sample Source: Outfall 001
Date Received: 10/29/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|------------------------------|------------|------|--------------|-----------|---------------|-------|------|
| Total Cyanide | < 0.005 | mg/l | 0.005 | EPA 335.4 | 11/04/2015 | 08:57 | 013 |
| Phenols, Total | < 0.02 | mg/l | 0.02 | EPA 420.4 | 11/04/2015 | 15:17 | 013 |
| Total Hardness as CaCO3 | 210 | mg/l | 0.0500 | EPA 200.7 | 11/06/2015 | 09:21 | 574 |
| Antimony, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Arsenic, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Beryllium, Total Recoverable | < 0.00100 | mg/l | 0.00100 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Cadmium, Total Recoverable | < 0.00250 | mg/l | 0.00250 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Chromium, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Copper, Total Recoverable | 0.00523 | mg/l | 0.00500 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Lead, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Mercury, Total Recoverable | < 0.000200 | mg/l | 0.000200 | EPA 245.2 | 11/06/2015 | 13:46 | 574 |
| Nickel, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Selenium, Total Recoverable | < 0.0100 | mg/l | 0.0100 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Silver, Total Recoverable | < 0.00500 | mg/l | 0.00500 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Thallium, Total Recoverable | < 0.00400 | mg/l | 0.00400 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| Zinc, Total Recoverable | 0.0487 | mg/l | 0.0100 | EPA 200.8 | 11/05/2015 | 08:47 | 574 |
| 624 Volatiles | | | | | | | |
| 1,1,1-Trichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,1,2,2-Tetrachloroethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,1,2-Trichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,1-Dichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,1-Dichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,2-Dichlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,2-Dichloroethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,2-Dichloropropane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,3-Dichlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 1,4-Dichlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 2-Chloroethylvinylether | < 0.0100 | mg/l | 0.0100 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Acrolein | < 0.0100 | mg/l | 0.0100 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Acrylonitrile | < 0.00500 | mg/l | 0.00500 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Benzene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Dichlorobromomethane | 0.00519 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |





Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Revised Analytical Report

Report Date: 01/15/2016
Report #: 6280
Job #: 0004691
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 59420R
Sample Date/Time: 10/29/2015 / 14:01
Sample Source: Outfall 001
Date Received: 10/29/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|---------------------------|-----------|------|--------------|---------|---------------|-------|------|
| Bromoform | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Bromomethane | < 0.00500 | mg/l | 0.00500 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Carbon Tetrachloride | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Chlorobenzene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Chloroethane | < 0.00500 | mg/l | 0.00500 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Chloroform | 0.0324 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Chloromethane | < 0.00500 | mg/l | 0.00500 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| cis-1,3-Dichloropropene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Chlorodibromomethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Dichlorodifluoromethane | < 0.00500 | mg/l | 0.00500 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Ethylbenzene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Methylene Chloride | < 0.00500 | mg/l | 0.00500 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Tetrachloroethene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Toluene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| trans-1,2-Dichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| trans-1,3-Dichloropropene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Trichloroethene | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Trichlorofluoromethane | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| Vinyl Chloride | < 0.00200 | mg/l | 0.00200 | EPA 624 | 11/04/2015 | 12:00 | 574 |
| 625 Semi-Volatiles | | | | | | | |
| 1,2-Diphenylhydrazine | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 1,2,4-Trichlorobenzene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,4,6-Trichlorophenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,4-Dichlorophenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,4-Dimethylphenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,4-Dinitrophenol | < 0.0213 | mg/l | 0.0213 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,4-Dinitrotoluene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,6-Dinitrotoluene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2-Chloronaphthalene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2-Chlorophenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2-Nitrophenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 3,3-Dichlorobenzidine | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |





Rapidan Service Authority
Wilderness
P. O. Box 148
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Revised Analytical Report

Report Date: 01/15/2016
Report #: 6280
Job #: 0004691
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 59420R
Sample Date/Time: 10/29/2015 / 14:01
Sample Source: Outfall 001
Date Received: 10/29/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|-----------------------------|----------|------|--------------|---------|---------------|-------|------|
| 4,6-Dinitro-o-cresol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 4-Bromophenyl phenyl ether | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 4-Chloro-3-methylphenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 4-Chlorophenyl phenyl ether | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 4-Nitrophenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Acenaphthene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Acenaphthylene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Anthracene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Benidine | < 0.0213 | mg/l | 0.0213 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Benzo(a)anthracene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Benzo(a)pyrene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Benzo(b)fluoranthene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Benzo(ghi)perylene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Benzo(k)fluoranthene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Butylbenzyl Phthalate | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Bis(2-Chloroethoxy)methane | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Bis(2-Chloroethyl)ether | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Bis(2-Chloroisopropyl)ether | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Bis(2-Ethylhexyl)Phthalate | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Chrysene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Dibenzo(a,h)anthracene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Di-n-butyl Phthalate | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Diethyl Phthalate | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Dimethyl Phthalate | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Di-n-octyl Phthalate | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Fluoranthene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Fluorene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Hexachlorobenzene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Hexachlorobutadiene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Hexachlorocyclopentadiene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Hexachloroethane | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| ndeno(1,2,3-cd)pyrene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |





Rapidan Service Authority
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Revised Analytical Report

Report Date: 01/15/2016
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Customer PO #:
Collected By: ESS Employee
Sample Location: Wilderness - Expanded Effluent

Sample ID#: 59420R
Sample Date/Time: 10/29/2015 / 14:01
Sample Source: Outfall 001
Date Received: 10/29/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|--------------------------------|----------|------|--------------|---------|---------------|-------|------|
| Isophorone | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Naphthalene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Nitrobenzene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| N-nitrosodimethylamine | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| N-nitrosodi-n-propylamine | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| N-nitrosodiphenylamine | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Pentachlorophenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Phenanthrene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Phenol | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| Pyrene | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |
| 2,3,7,8-Tetrachlorodibenzodiox | < 0.0106 | mg/l | 0.0106 | EPA 625 | 11/05/2015 | 19:13 | 574 |

COMMENT:

This revised report replaces the original report issued 11/16/15; Report revised for semi-volatile compounds.

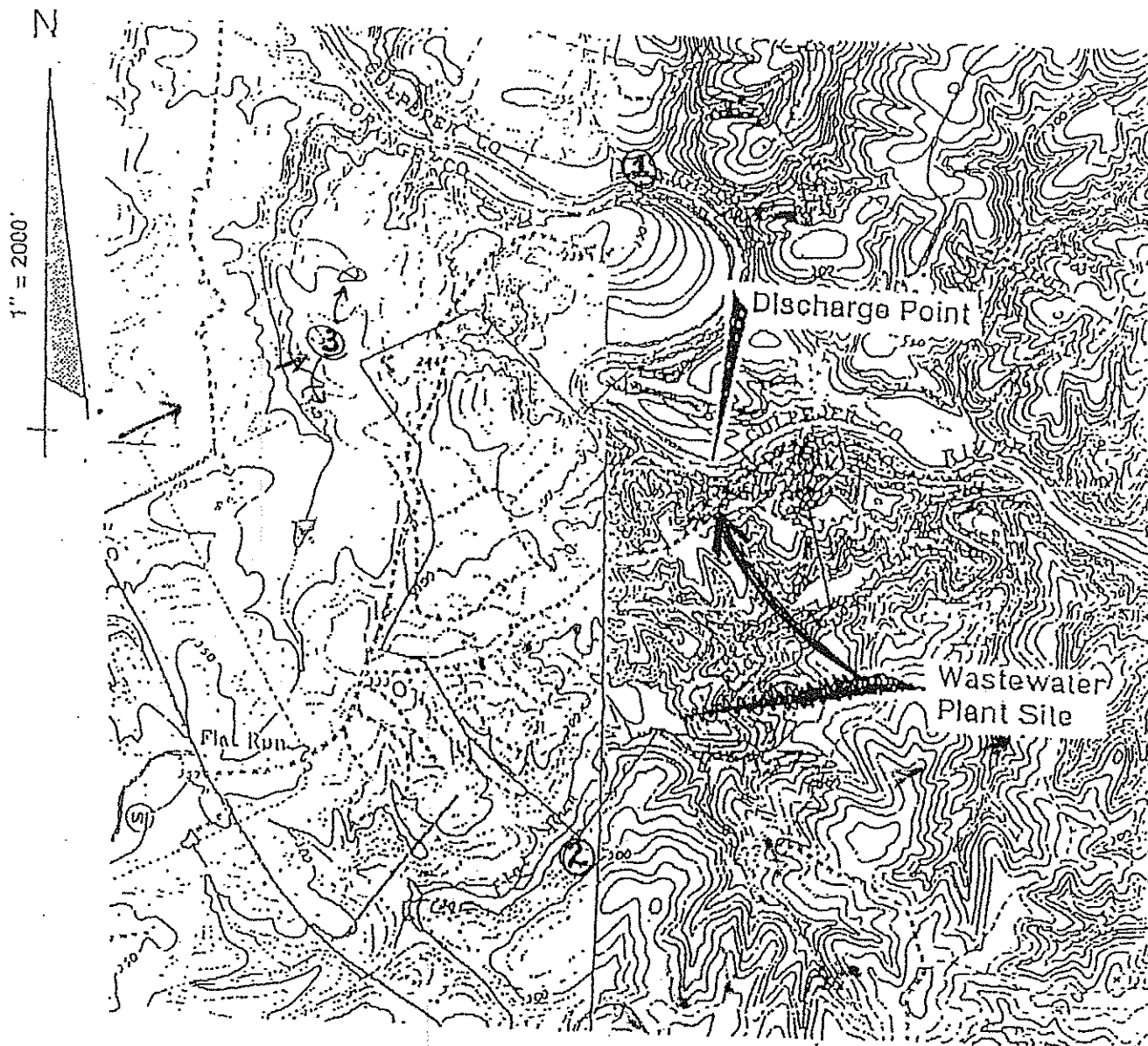
574 Samples subcontracted to VELAP ID# 460160

013 Samples subcontracted to VELAP ID# 460013



LOCATION MAP

Water bodies within one mile beyond facility's property boundary



1. Rapidan River

2. Flat Run

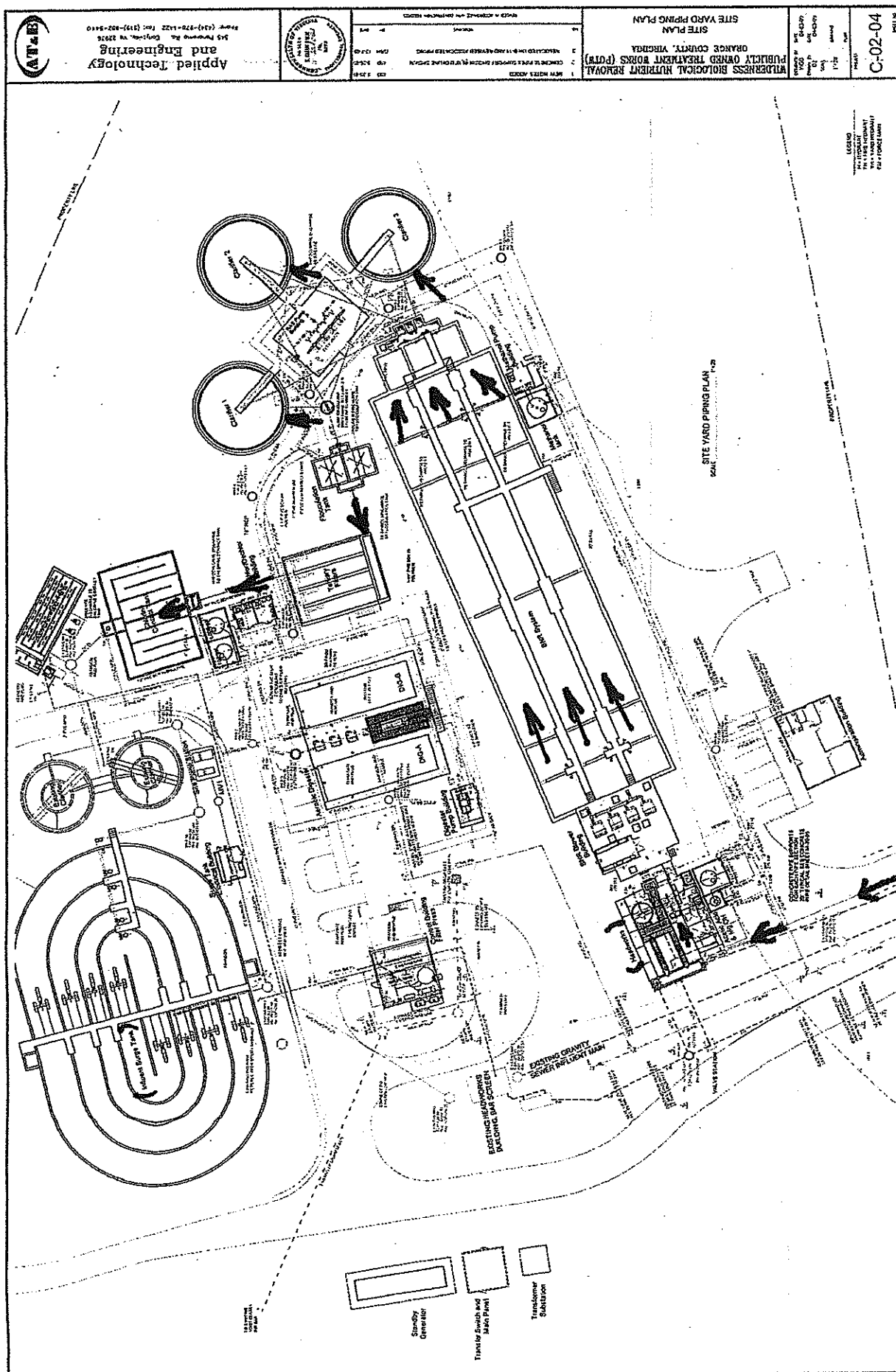
3. Somerset Golf Course (2 small lakes)

Rapidan Service Authority
Wilderness Wastewater Treatment Plant

7.5 Min. Topo Map

DISCHARGE POINT - LAT. 38 22'30" , LONG. 77 44'45" .

Quad Maps = Germanna Bridge, Richardsville, Mine Run, and Chancellorsville.



VPDES PERMIT APPLICATION ADDENDUM

1. **Entity to whom the permit is to be issued:** Rapidan Service Authority
Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.
Same as above.
2. **Is this facility located within city or town boundaries?** Yes ☐ No ☒
3. **Please provide the tax map parcel number for the land where the discharge is located:** 12B Parcel D-R
4. **For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities?** 0
5. **What is the design average flow of this facility in million gallons per day (MGD)?** 2.0 (MGD) For industrial facilities, provide the maximum 30-day average production level, include units: _____

6. **In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels?** ☒ Yes ☐ No
 If yes, please identify the other flow tiers in MGD: Continue reduced effluent monitoring for the 2.0 MGD Flow Tier Special Condition of the current permit.
Please consider the following as you answer the questions in #5 above for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? NO Is your facility's design flow considerably greater than your current flow? NO
7. **Nature of operations generating wastewater:** Municipal wastewater treatment
 100 % of flow from domestic connections/sources
 Number of private residences to be served by the treatment works: 4408
 0 % of flow from non-domestic connections/sources
8. **Mode of discharge:** ☒ Continuous ☐ Intermittent ☐ Seasonal
 Describe frequency and duration of intermittent and seasonal discharges: _____
9. **Identify the characteristics of the receiving stream at the point just above the facility's discharge point(s):**

| Stream Characteristic | Outfall Number | | | | | | |
|---|----------------|--|--|--|--|--|--|
| | | | | | | | |
| Permanent stream, never dry | 001 | | | | | | |
| Intermittent stream, usually flowing, sometimes dry | | | | | | | |
| Ephemeral stream, wet-weather flow, often dry | | | | | | | |
| Effluent-dependent stream, usually or always dry | | | | | | | |
| Lake or pond <u>at or below discharge point</u> | | | | | | | |
| Other: | | | | | | | |

10. Approval date(s), if applicable:

O & M Manual 01/17/12 Sludge/Solids Management Plan 03/09/01

Have there been changes in your operation or procedures since the above approval dates? Yes ☒ No

- 11. Privately Owned Treatment Works:** If this application is for a privately owned treatment works serving, or designed to serve, 50 or more residences, you must include with your application notification from the State Corporation Commission that you are incorporated in the Commonwealth and verification from the SCC that you are in compliance with all regulations and relevant orders of the State Corporation Commission. Incorporated also includes Limited Liability Companies (LLCs), Limited Partnerships (LPs) and certificates of authority.

- 12. Please provide a list of Materials stored at the facility. Please complete the table below or attach another page if more room is necessary.**

| Material Storage | | |
|-----------------------|---------------------|--------------------------------------|
| Materials Description | Volume Stored | Spill/Stormwater Prevention Measures |
| Acetic Acid | 1000 gallons | Spill containment |
| Magnesium Hydroxide | 5600 gallons | Spill containment |
| Methanol | 5000 gallons | Spill containment |
| Alum | 4200 gallons | Spill containment |
| Sodium Hypochlorite | 4200 gallons | Spill containment |
| Bisulfite | (6) 55 gallon drums | Stored indoors |
| Polymer | (4) 55 gallon drums | Stored indoors |
| Diesel Fuel | 6000 gallons | Double wall tank |

- 13. Please provide the name and email addresses for personnel who will be involved with the reissuance of the VPDES permit:**

| Name | Title | E-mail Address |
|------------------|---------------------------|----------------------|
| Dudley M. Pattie | General Manager | rsa @rapidan.org |
| Tim Clemons | Assistant General Manager | tclemons@rapidan.org |
| | | |
| | | |
| | | |

14. Consent to receive Electronic Mail

The Department of Environmental Quality (DEQ) may deliver permits and certifications (this includes permit issuances, reissuances, modifications, revocation and reissuances, terminations and denials) to recipients, including applicants or permittees, by electronically certified mail where the recipients notify DEQ of their consent to receive mail electronically (§ 10.1-1183). Check *only one* of the following to consent to or decline receipt of electronic mail from DEQ as follows:

☒ Applicant or permittee agrees to receive by electronic mail the permit that may be issued for the proposed pollutant management activity, and to certify receipt of such electronic mail when requested by the DEQ.

If yes, provide email: tclemons@rapidan.org

☐ Applicant or permittee declines to receive by electronic mail the permit that may be issued for the proposed pollutant management activity.

PUBLIC NOTICE BILLING INFORMATION

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the Agent/Department shown below. The public notice will be published once a week for two consecutive weeks in Orange County Record in accordance with 9 VAC 25-31-290.C.2.

Agent/Department to be billed: Rapidan Service Authority

Owner: Rapidan Service Authority

Agent/Department Address: P.O. Box 148

Ruckersville, VA 22968

Agent's Telephone No.: (434) 985-7811

Printed Name: Dodley M. Patton

Authorizing Agent – Signature: Dodley M. Patton

Date: 1/22/16

VPDES Permit No. VA0083411

Facility Name - Wilderness Wastewater Treatment Plant

VPDES Sewage Sludge Permit Application for Permit Reissuance

Instructions

WHO MUST SUBMIT THE APPLICATION - All facilities with a current VPDES Permit that authorizes the discharge of treated sewage wastewater that are applying for reissuance must complete and submit this application.

Part 1 is general information to be provided by all facilities.

Part 2 must be completed by all facilities that generate Class A or Class B biosolids that are land applied.

Part 3 must be completed by all facilities that land apply Class B biosolids.

Part 1 – Sludge Disposal Management (To be completed by all facilities)

Facility Name: Wilderness Wastewater Treatment Plant

VPDES Permit No: VA0083411

1. Shipment Off Site for Treatment or Blending

Is sewage sludge from your facility sent to another facility that provides treatment or blending?

☐ Yes ☒ No

If you send sewage sludge to more than one facility, attach additional sheets as necessary.

Shipment off site is: ☐ The primary method of sludge disposal ☐ A back up method of sludge disposal

a. Receiving Facility Name _____

b. Receiving Facility VPDES Permit No. _____

c. Include an acceptance letter from the Receiving Facility.

d. Receiving Facility's ultimate disposal method for sewage sludge _____

2. Disposal in a Municipal Solid Waste Landfill

Is sewage sludge from your facility placed in a municipal solid waste landfill?

☐ Yes ☒ No

If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.

Landfilling is: ☐ The primary method of sludge disposal ☐ A back up method of sludge disposal

a. Landfill Name _____

b. Landfill Permit No. _____

c. Include an acceptance letter from the landfill.

3. Incineration

Is sewage sludge from your facility fired in a sewage sludge incinerator?

☐ Yes ☒ No

Incineration is: ☐ The primary method of sludge disposal ☐ A back up method of sludge disposal

a. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?

☐ Yes ☐ No

If yes, provide the Air Registration No. _____

If no, complete items b - d for each incinerator that you do not own or operate.

b. Facility Name _____

c. Air Registration No. _____

d. Include an acceptance letter from the Incinerator.

4. Class A Biosolids

Do you produce Class A biosolids for land application or distribution and marketing? If yes, complete Part 2.

☐ Yes ☒ No

Are Class A biosolids from your facility land applied in bulk?

☐ Yes ☐ No

Do you sell or give away Class A biosolids in a bag or other container for application to the land? If yes, provide the

☐ Yes ☐ No

VDACS certification number? _____

5. Class B Biosolids

Do you produce Class B biosolids? If yes, complete Part 2.

☒ Yes ☐ No

Are Class B biosolids from your facility land applied under the authorization of this VPDES Permit? If yes, complete Part 3.

☐ Yes ☒ No

6. Land Application Under a Separate Permit

Are biosolids from your facility land applied under the authorization of a permit other than your VPDES Permit?

☒ Yes ☐ No

Biosolids are land applied under the authorization of a ☐ VPA permit ☐ Another VPDES Permit ☐ Out of State

Complete items a - c for each VPA permit authorized to land apply biosolids from your facility.

a. Permittee Name _____

b. Permit No. _____

*** RSA contracts with RECYC Systems, Inc. for all land application
on VDH Approved sites. Part 3 is not included in this application.

c. Include copy of any information you provide to the Receiving VPDES or VPA Permittee to comply with the "notice and necessary information" requirement of 9VAC25-31-530 F.

VPDES Sewage Sludge Permit Application for Permit Reissuance

Part 2 – Biosolids Characterization (To be completed by all facilities that generate biosolids that are land applied.)

1. Have there been changes to sludge treatment processes or storage facilities since the previous permit issuance/reissuance? ☐ Yes ☒ No
2. Do the biosolids generated under this permit that will be land applied meet one of the Class A pathogen requirements in 9VAC25-31-710 A 3 through A 8 or Class B pathogen requirements in 9VAC25-31-710 B 1 through B 4? ☒ Yes ☐ No
Identify the pathogen reduction option utilized to demonstrate compliance with the pathogen reductions requirements and provide the data that demonstrate compliance with the applicable alternative. Class B, Alternative 2, D, 1
3. Do the biosolids generated under this permit that will be land applied meet one of the vector attraction reduction requirements in 9VAC25-31-720 B 1 through B 10? ☒ Yes ☐ No
Identify the vector attraction reduction option utilized to demonstrate compliance with the vector attraction reductions requirements and provide the data that demonstrate compliance with the applicable alternative. Alternative 3
4. Do the biosolids to be land applied meet the ceiling/pollutant concentrations in 9VAC25-31-540 B? ☐ Yes ☒ No
5. Has data from the most recent 3 samples for pH (S.U.), Percent Solids (%), Ammonium Nitrogen (mg/kg), Nitrate Nitrogen (mg/kg), Total Kjeldahl Nitrogen (mg/kg), Total Phosphorus (mg/kg), Total Potassium (mg/kg), Alkalinity as CaCO₃ (mg/kg), Arsenic (mg/kg), Cadmium (mg/kg), Copper (mg/kg), Lead (mg/kg), Mercury (mg/kg), Nickel (mg/kg), Selenium (mg/kg), Zinc (mg/kg) been submitted to DEQ? The samples shall be no more than 4½ years old and each sampling date shall be at least 1 month apart. ☒ Yes ☐ No
If no, provide the data with this application.

Part 3 – Land Application of Class B Biosolids (To be completed by all facilities that land apply Class B biosolids.)

1. Provide to DEQ and to each locality in which biosolids are to be land applied, written evidence of financial responsibility. Evidence of financial responsibility shall be provided in accordance with 9VAC25-31-100 P 9.
2. For each site, provide a properly completed landowner agreement for each landowner, using the most current Land Application Agreement - Biosolids Form (VPDES Sewage Sludge Permit Application Form – Attachment to Section C).
3. Are any new land application fields proposed at this reissuance? ☐ Yes ☐ No
If yes, contact the DEQ Regional Office for additional submittal requirements.
4. For the currently permitted land application fields, are the previously submitted site booklets, maps and acreage accurate. ☐ Yes ☐ No
If no, contact the DEQ Regional Office for additional submittal requirements.
5. Does the facility's Biosolids Management Plan on file with DEQ include the following minimum information? ☐ Yes ☐ No
 - a. An odor control plan that addresses the abatement of odors resulting from the storage and/or land application of biosolids.
 - b. A description of the transport vehicles to be used.
 - c. Procedures for biosolids offloading at the land application site including spill prevention, cleanup (including vehicle cleaning), field reclamation, and emergency notification and cleanup measures.
 - d. A description of the land application equipment including procedures for calibrating equipment to ensure uniform distribution and appropriate loading rates.
 - e. Procedures used to ensure that land application activities address notification requirements, signage requirements, slope restrictions, operation limitations during periods of inclement weather, soil pH requirements, buffer zone requirements, and site restrictions.
 - f. Any other information necessary to ensure compliance with the requirements of the Biosolids Program of the VPDES Permit Regulation (9VAC25-31-420 through 720).

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title Dudley M. Pattie, General Manager

Signature 

Telephone number / Email (434) 985-7811

Date signed 1/22/16

(Based on a review of this information, it may be necessary to submit additional information to meet other legal or technical review requirements.)



January 6, 2016

Mr. Joe Compton
Rapidan Service Authority
P. O. Box 148
Ruckersville, VA 22968

Subject: 2015 Wilderness WWTP- Pathogen Reduction Study Summary

Dear Joe,

Environmental Systems Service, Ltd. (ESS) conducted vector attraction study for the Wilderness WWTP from 11/30/2015 to 12/30/2015. The original 5 gallon sample which was received from RSA was immediately mixed and poured off into two (2) sample vessels. These two vessels were labeled Vessel A and Vessel B (duplicate) which was contained in 4000 mL glass Erlenmeyer flasks. Mixed liquor suspended solids (MLSS), mixed liquor volatile suspended solids (MLVSS), and Fecal Coliform samples were collected from Vessels A and B at both the start test date and after the 30 day period. Each vessel was mixed and aerated with a small air compressor and diffuser stone for the duration of the test period. As water evaporated out of the vessel over the course of the 30 day period, additional distilled water was added to each vessel as needed until the original test volume was maintained.

After the 30 day period had expired a second round of MLSS, MLVSS, and Fecal Coliform samples were collected from Vessels A and B.

| | | | | |
|-----------------|-------------------------|-----------|-------------|----------------|
| Vessel A | % Sludge = 2.77% | | | |
| Date | MLSS | MLVSS | % Volatile | Fecal Coliform |
| 11/30/2015 | 27700 | 18600 | 67.1% | 19500 |
| 12/30/2015 | 31900 | 21200 | 66.5% | 5330 |
| | | Reduction | 0.7% | |

| | | | | |
|-----------------|-------------------------|-----------|-------------|----------------|
| Vessel B | % Sludge = 3.02% | | | |
| Date | MLSS | MLVSS | % Volatile | Fecal Coliform |
| 11/30/2015 | 30200 | 20100 | 66.6% | 72800 |
| 12/30/2015 | 27200 | 18000 | 66.2% | 7210 |
| | | Reduction | 0.4% | |

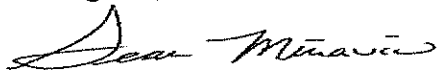
Average Reduction for 30 Day Period **0.5%**

The average total volatile reduction of Vessels A and B during the 30 day period was calculated to be 0.5%. According to the biosolids use regulations of 9VAC 25-31 720 section B.3 the sludge satisfies vector attraction reduction requirements for land application when 38% volatile solids reduction from subdivision 1 cannot be met for an aerobically digested sludge. In this case vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent of 2.0% or less aerobically in the laboratory bench scale for a period of 30 days at 20°C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15%, vector attraction reduction is achieved.

Since the volatile solids reduction for the Wilderness WWTP was found to be an average of 0.5% reduction after the additional 30 day period, the sludge does meet the vector attraction reduction requirements of 9VAC 25-31 720. The following information should be submitted on your Form SO1 discharge monitoring report. This data supports the alternative method 3. On an Annual basis, you are required to perform a bench scale demonstration of your facility's sludge quality. Copies of the bench sheets for this demonstration must be submitted with your Form S01 DMR.

Should you have any questions or concerns please feel free to contact me at 540-825-6660.

Best regards,



Sean Minavio, Environmental Scientist
Environmental Services Division

Attachment – Analytical Report & Chains of Custody



Analytical Report

Rapidan Service Authority
Wilderness
P. O. Box 148
Ruckersville, VA 22968

Report Date: 01/04/2016
Report #: 7465
Job #: 0004748
Customer #: 2984W
Customer PO #:
Collected By: ESS Employee
Sample Location: Vector Attraction

Sample ID#: 0062083 Sample Source: Vessel A
Sample Date/Time: 12/30/2015 / 07:30 Date Received: 12/30/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|--------------------------|---------|-------|--------------|------------------|---------------|-------|------|
| MLSS/MLVSS | | | | | | | |
| Mixed Liquor Susp Solids | 31,900 | mg/l | 1.00 | SM 2540 D-2011 | 12/30/2015 | 11:27 | BK |
| Mixed Liquor Volatile SS | 21,200 | mg/l | 1.00 | SM 2540 E-2011 | 12/30/2015 | 16:45 | JI |
| Fecal Coliform | 5,330 | MPN/g | 1.8 | SM 9221 E+C-2006 | 12/30/2015 | 12:00 | JI |

Sample ID#: 0062084 Sample Source: Vessel B
Sample Date/Time: 12/30/2015 / 07:35 Date Received: 12/30/2015

| Parameter | Results | Unit | Report Limit | Method | Analysis Date | Time | INIT |
|--------------------------|---------|-------|--------------|------------------|---------------|-------|------|
| MLSS/MLVSS | | | | | | | |
| Mixed Liquor Susp Solids | 27,200 | mg/l | 1.00 | SM 2540 D-2011 | 12/30/2015 | 11:45 | BK |
| Mixed Liquor Volatile SS | 18,000 | mg/l | 1.00 | SM 2540 E-2011 | 12/30/2015 | 16:45 | JI |
| Fecal Coliform | 7,210 | MPN/g | 1.8 | SM 9221 E+C-2006 | 12/30/2015 | 12:12 | JI |

COMMENT:

Results reported as MPN/g are reported on a dry weight basis.



Vessel A % Sludge = 2.77%

| Date | MLSS | MLVSS | % Volatile | Fecal Coliform |
|------------|-------|-------|-------------|----------------|
| 11/30/2015 | 27700 | 18600 | 67.1% | 19500 |
| 12/30/2015 | 31900 | 21200 | 66.5% | 5330 |
| Reduction | | | 0.7% | |

Vessel B % Sludge = 3.02%

| Date | MLSS | MLVSS | % Volatile | Fecal Coliform |
|------------|-------|-------|-------------|----------------|
| 11/30/2015 | 30200 | 20100 | 66.6% | 72800 |
| 12/30/2015 | 27200 | 18000 | 66.2% | 7210 |
| Reduction | | | 0.4% | |

Average Reduction for 30 Day Period **0.5%**